

hind quarters. Occasionally one comes across strange happenings with regard to animals tied up. On one occasion a goat tied up for a panther was killed by a porcupine, perhaps by accidental collision. A friend of mine found one of his buffaloes gored to death by a bison, the ground all round being trampled by the enraged wild beast.

Since writing these notes I have received the Journal for June, 1904, where I find several interesting questions discussed concerning big game. There is nothing new in Colonel Stewart's note regarding the original home of the tiger. I think it is generally accepted that the tiger is an immigrant into India from northern regions. The animal's impatience of the heat of the sun in southern latitudes, and habit of lying immersed in water in the heat of the day—the only feline addicted to this—point to a northern origin. At the same time it may be doubted if the southerly immigration of the tiger has taken place as recently as Colonel Stewart appears to indicate. Tigers abound in Java and Sumatra, and must have presumably got there before those islands became separated from the mainland. This may have been within recent geological but not historical times. Another contributor writes on "Tiger *versus* Bear," and asks if there are other instances on record of encounters between these animals, of which he cites an example. I do not think such combats are uncommon, and a tiger should have little difficulty in disposing of the small Malay bear, when he is able to kill and devour the much more formidable black bear of the Indian plains. Sanderson, in his "*Thirteen years among the wild beasts of India*," tells us of a tiger which was in the habit of preying on the hapless bruin in preference to other game. In the Melghat Forest, North Berar, in 1890, the skin of a bear was brought to me, quite fresh, with many holes in it inflicted by a tiger. The villagers said there had been a prolonged combat between the two animals, and the bear managed to get away, but so badly wounded that it was easily disposed of by the inhabitants who had been attracted to the spot by the roarings and howlings of the combatants. In 1896 I found on the top of a hill near Fort Mahor, Hyderabad, the remains of two bears which had been killed and devoured by a pair of tigers. Tigers will resort to strange diet when hard put to it, and the hairy pelt of a bear must be difficult to digest. I have found the remains of crabs and once of a large python eaten by a tiger, and one frequently finds porcupine quills embedded in the paws. One large tiger I shot had several suppurating sores on the back of the neck from which porcupine quills were extracted. This looked as if he had been rolling on his victim, although my shikaris would have it that the porcupine had shot the quills at his enemy, like arrows from a bow!

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POONA, February 9th, 1905.

94th Russell's Infantry.

No. XXII.—DOUBLE-HEADED SNAKES.

No doubt everyone in India is familiar with the so-called double-headed snakes which many jugglers include among their stock in trade. The snakes

exhibited as such by this fraternity are usually the earth snakes, creatures remarkable among their kind for the bluntness of their tails, a condition which lends itself peculiarly well to the artifices of these people, who mutilate or otherwise modify them so as to make them resemble the head. The snake usually selected for this purpose, both on account of its abundance and size, is John's Earth Snake (*Eryx johnii*).

It is perhaps not so well-known that genuine double-headed snakes do occur occasionally as freaks, but in these instances both heads are always attached to the anterior extremity of the body constituting what is technically called anterior dichotomy.

Dichotomy (Greek *dicha* in two parts, *temno* I cut) arises from a cleavage of one or other pole of the developing embryo, and may occur anteriorly or posteriorly. It may be partial when the reduplicated heads, sterns, or bodies remain more or less attached to one another, or complete when two separate organisms are derived, so that this phenomenon accounts for one method by which twins are produced. There are abundant examples of monstrosities in man and the lower animals formed by this process to be found in various museums, and it is therefore not surprising that the same abnormality occurs occasionally in snakes.

I have just had an opportunity of examining a young specimen of the common *Lycodon aulicus* exhibiting this anomaly, which I found on the shelves of the Fyzabad Museum. This specimen has the head and neck reduplicated, and a reference to my notebook shows that all the records of this peculiarity I have been able to collect from various sources, are examples of anterior dichotomy. I have never heard of an example of posterior dichotomy in snakes, though the condition doubtless occurs, and has been observed in frogs and other reptiles. This Fyzabad specimen, which measures a shade over $5\frac{1}{2}$ inches, is evidently a hatchling. The dual nature of the head and neck is very evident to sight and touch for $\frac{2}{3}$ of an inch. The reduplicated parts are placed side by side, and are connected by a web except for $\frac{1}{2}$ of an inch where the snouts are quite free. The web commences opposite the 8th supra-labial shields, and is placed rather nearer the ventral aspect, so that the chins are approximated. At the point where the two necks blend, is a pronounced rounded dorsal prominence. The size and sodden condition of the specimen render the detail of the scale characters somewhat difficult to determine with accuracy; however, I have made the following observations:—The præocular touches the frontal shield on the right side of the left head only. The rows of scales anterior to the dorsal prominence, *i.e.*, over the cleft part of the body, are variable, but number about 27; behind this they are the normal 17. There are 189 ventrals, those beneath the bifurcated parts are not double, but extend completely across both trunks. The navel implicates the 167th and 168th shields so that 21 intervene between it and the anal shield, which is divided. The subcaudals are 62. In other respects the scales and shields are normal.

The following from my notebook may add to the interest of this note.

Buckland in his "Curiosities of Natural History" (p. 177) says there are two specimens of snakes with two heads on one body in the Royal College of Surgeons' Museum, London, and one of these he identified as *Coluber natrix* (now *Tropidonotus natrix*), the common grass snake found in England.

In the Journal of the Linnean Society for 1868 is mentioned a sea-snake, *Hydrophis subcævis* (now *H. cyanocinctus*) caught near Madras, with two heads.

Nicholson in his book "Indian Snakes" (p. 22) mentions a young two-headed *Tropidonotus quincunciatus* (now *T. piscator*) in the Madras Museum, and says "this monstrosity is apparently rather common amongst the sea-snakes" and further remarks: "they do not, however, appear to survive their birth long, the specimens to be found in museums being of small size." That these freaks are as common as Nicholson remarks, I am inclined to doubt, and Mr. Phipson in a letter to me, dated 2nd February 1905, says: "I have been collecting snakes in this country for the last 26 years, and have examined thousands of sea-snakes in the fishermen's nets here, but I have never seen an instance of this form of teratology." The specimen I have described in this note is the only one of many hundreds of snakes I have examined in the fresh state and in museums which was so distinguished.

In "*The Field*" for 31st October, 1903, a Mr. Fulton writes as follows:—"Some time ago when in Australia I was one day helping the men on a sheep station to collect wood previous to the shearing season. In cutting up some old timber we came across an old snake with several young ones. One of these had two perfect heads on, so I secured it, and brought it home."

S. S. Flower in the P. Z. S., 1899, p. 677, mentions a water snake, *Homalopsis buccata*, in the Siamese Museum, with "two heads, side by side, each about equally perfectly developed."

In the *Madras Times* for 13th January, 1897, a specimen of a two-headed snake is mentioned in the possession of a Mr. E. C. Fischer, of New York City, then in Madras. It was identified as an American hog-nosed snake *Heterodon simus* and was about a foot long, and over four months old.

The following remarks were made:—"The snake lives in a glass box, and feeds with both heads simultaneously on milk, raw meat, and blood. Mr. Fischer finds it best to feed both heads at once, for strange to say, they appear to be jealous of each other, and sometimes fight; at other times they play with one another. The animal seems to know Mr. Fischer, for it comes to the side of its box, and welcomes him by protruding its tongues in sign of joy. A photograph of the snake was recently given in the *Scientific American*.

FYZABAD, 1st February, 1905.

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NO. XXIII.—WINTER PLUMAGE OF THE MALE BENGAL FLORICAN (*SYPHEOTIS BENGALENSIS*).

There appears to be some doubt about the male winter plumage of the Bengal Florican, since some of our best ornithologists are at variance on this point.

The most recent work I have access to is Oates' "Game Birds of India." In part I, p. 418, this author describes the male in winter plumage, and the female